Notes on the Fauna of Christmas Island, Indian Ocean

INTRODUCTION

By F. N. CHASEN

Christmas Island is about 190 miles from the south coast of Java, nearly three times that distance from the Cocos Keeling Islands to the west and roughly 900 miles from the Australian coast to the east. Between it and Java are depths of over 3,000 fathoms.

The fauna includes a high percentage of peculiar forms. All the indigenous birds and mammals are well differentiated; the resident birds are of Austro-Oriental rather than Malaysian affinities. The island constantly receives additions to its biota both by natural means and by human agency. Winds from the

north in the first third of the year bring vagrant birds, butterflies and moths: large numbers of dragonflies also appear at such times but soon disappear.

Several collectors preceded the late C. W. Andrews on Christmas Island but his "Monograph" published in 1900 and aptly described at the time as the best account of a true oceanic island that had ever been published, summarized the results of their work and gave in addition detailed accounts of his own extensive collections. Andrews' book was restricted to descriptions of the geology and physical features with the land fauna and flora, but further reports including some dealing with the littoral fauna were published subsequent to the monograph and to the author's second visit to the island in 1908.

Another zoologist, Dr. R. Hanitsch of the Raffles Museum worked on Christmas Island in 1904 but no general account of the collections made has been published. A short paper on two fresh water crustaceans from the pen of the late Dr. J. G. de Man appeared in 1905 and in various publications there are casual references to a number of the species obtained but these are now difficult to trace.

A small collection of vertebrates was made by two Dayak collectors attached to the Malayan Museums in 1923: a short paper on the birds obtained was published.

In 1887 the island was uninhabited although it had been visited before that date. It was annexed by the British Government in 1888 and a settlement was established. Soon after a company was formed for the purpose of exploiting the rich phosphate deposits and large numbers of coolies were imported. Changes in the fauna were therefore to be expected for a number of species were certain to be introduced by other than natural means. Andrews, for instance, mentions large centipedes *(Scolopendra)* arriving in coco-nut leaves imported for thatching. Faunal changes in such an isolated locality as Christmas Island are of particular interest to the zoologist.

After his return visit to the island in 1908 Andrews recorded that such changes had already taken place chiefly in the neighbourhood of the settlement and quarries. Neither of the indigenous rats nor the shrew could be found. *Rattus rattus* was present on the island[1] and perhaps had brought with it an epidemic disease responsible for the disappearance of *Rattus macleari* and *R. nativitatis*. The native land-birds had held their own and no introduced bird had obtained a footing on the island. No changes of importance were noticed among the native invertebrates although the Scolopendra had increased in numbers.

1. *Mus musculus* and *Rattus concolor* were also collected on the island in 1932.

Probably many insects had been introduced but nothing definite was said on this point.

Hanitsch obtained a starling, *Aethiopsar grandis javanicus* (Cab.) in 1904. In 1923 a mynah *Gracula javana* (Cuv.) and the Java Sparrow, *Munia oryzivora* (Linn.) were obtained: all are common cage-birds in native villages throughout Malaysia.

The present short papers are the result of a visit to the island made by Mr. M. W. F. Tweedie of the Raffles Museum in 1932 (20th August–25th September) primarily for the purpose of conducting an investigation into the status of the indigenous fruit-pigeon, *Ducula whartoni*, at the request of the Government of the Straits Settlements.

The opportunity was taken of making small collections of various animals. Some specialists have been kind enough to examine and report on these and the first results are given below. They are fragmentary, but as they supplement in a small way our knowledge of the changing fauna of this interesting island they seem worth publishing. For instance, Andrews' long stay on the island produced nine species of *Rhopalocera* of which two, perhaps owing to the luck of collecting, are not represented in the 1932 collection, but on the other hand Mr. Tweedie's casual collecting has, according to Mr. Pendlebury, added no less than four species to the island fauna, a noteworthy result.

LITERATURE

The following can be added to the list of papers relating to Christmas Island given by Andrews (p. 318).—

1900. ANDREWS, C. W.—"On the Marine Fauna of Christmas Island (Indian Ocean)", Proc. Zool. Soc., 1900, pp. 115–141, pls. xii–xiii. Contains contributions by E. A. Smith (Marine Mollusca), H. M. Bernard (Madreporaria), R. Kirkpatrick (Sponges), and F. C. Chapman (Foraminifera).

1905. RIDLEY, H. N.—"An Expedition to Christmas Island." Journ. Straits Br. Roy. Asiat. Soc., 45, 1905, pp. 121–271.

— DE MAN, J. G.—"On Species of Crustacea of the Genera *Ptychognathus* Stimps. and *Palaemon* Fabr. from Christmas Island." Proc. Zool. Soc., 1905, p. 537–550, pls. xvii and xviii.

1909. ANDREWS, C. W.—"An Account of a Visit to the Island in 1908." op. cit., 1909, pp. 101–103.

— TATE REGAN, C.—"A Collection of Fishes made by Dr. C. W. Andrews, F.R.S., at Christmas Island." tom. cit., pp. 403–406, pl. lxvi.

— CALMAN, W. T.—"On Decapod Crustacea from Christmas Island." tom. cit. pp. 703–713, pl. lxxii.

— ANDREWS, C. W.—"A Note on the Habits of the Robber Crab (*Birgus latro*)." tom. cit. p. 887–889, pl. lxxxiii.

1924. CHASEN, F. N. and KLOSS, C. B.—"Some Birds of Christmas Island (Indian Ocean)." Journ. Straits Br. Roy. Asiat. Soc., 2, 1924, pp. 65–68.

1926. NUTTAL, W. L. F.—"A Revision of the Orbitoides of Christmas Island." Quart. Journ. Geol. Soc., 82, 1926, pp. 22–42; pls. iv–v.